IN THE CLAIMS

1. (Currently Amended) A laser-induced breakdown spectroscopy (LIBS) apparatus for detecting cancer comprising:

a laser light source;

~~a detector; and~~

a probe for directing laser light from the laser light source to a sample *in vivo*~~; wherein the laser light is directable through the probe to a sample *in vivo*~~ to generate an emission spectrum; ~~and said emission spectrum from said sample is capturable for a recording, a real-time analysis or a subsequent analysis~~

a detector for detecting the emission spectrum; and

a processor for analyzing the emission spectrum to detect a cancer in the sample.

2. (Original) The apparatus according to Claim 1, and further comprising a data acquisition or analysis system with optionally a separate data processor.

3. (Original) The apparatus according to Claim 1, in which the laser light is transmitted to the probe through a harmonic separator for directing laser light from the laser light source.

4. (Currently Amended) The apparatus according to Claim [[1]] 3, further comprising a dichroic mirror for reflecting the laser light from the harmonic separator.

5. (Original) The apparatus according to Claim 1, further comprising a coupling lens for coupling the laser light at an input end of a multi-modal optical fiber.

6. (Original) The apparatus according to Claim 1, wherein the emission spectrum is collected either in the same fiber or in another fiber to travel in a backward direction to a spectrometer.

7. (Original) The apparatus according to Claim 1, wherein the laser light source is a CO_2 laser, a Ruby laser, a long-pulse YAG laser, an Alexandrite laser, an ER:YAG laser, an intense pulsed light laser, a KTP laser, a diode laser, or a pulse dye laser.

8. (Original) The apparatus according to Claim 1, wherein the laser light source is a pulsed Nd:YAG laser.

9. (Currently Amended) The apparatus according to Claim 1, wherein the apparatus is part of a laser scalpel.

10-18. (Cancelled).

19. (Currently Amended) A method of using a laser-induced breakdown spectroscopy (LIBS) system for detecting cancer, said method comprising:

directing laser light from a laser light source to a biological sample[[,]] ;

generating an emission spectrum from the biological sample[[,]] ;

detecting the emission spectrum[[,]] ; and

~~capturing~~ analyzing the emission spectrum ~~for a recording, a real-time analysis or a subsequent analysis~~ to detect cancer.

20. (Currently Amended) The method according to Claim 19, [[and]] further comprising:

comparing the emission spectrum with a control emission spectrum to determine ~~the presence or absence of health of a host organism from which~~ whether the biological sample is ~~obtained~~ malignant.

21. (Currently Amended) The method according to Claim 19, [[and]] further comprising:

analyzing the emission spectrum to determine the presence or absence of at least one trace element.

22. (Currently Amended) The method according to Claim 19, [[and]] further comprising:

analyzing the emission spectrum to determine the quantity of at least one trace element.

23. (Currently Amended) The method according to Claim 19, [[and]] further comprising:

evaluating the light emitted from the sample by calculating the concentration of at least one chemical element from a sample;

comparing the concentration of the chemical element in the sample with a range of concentrations of the chemical element in a standard; and

classifying the sample as normal or abnormal.

24. (Currently Amended) The method according to Claim 19, [[and]] further comprising:

directing the laser light through a probe onto the sample *in vivo*.

25. (Original) The method according to Claim 19, wherein the sample is selected from the group consisting of: blood, nail, hair, tissue or biological fluid.

26-27. (Cancelled).

28. (Original) The method according to Claim 19, wherein the method is practiced to detect breast cancer.

29-30. (Cancelled).

31. (Original) The method according to Claim 19, wherein the method is practiced utilizing a laser scalpel.

32. (New) The method of Claim 31, wherein the biological sample is a neoplastic mass, and the emission spectrum is analyzed in real time, whereby the neoplastic mass can be removed using the laser scalpel while sparing a maximum amount of healthy tissue.

33. (New) The method of Claim 19, wherein the cancer is selected from the group consisting of bladder, colon, endometrial, lung, ovarian, prostate and rectal cancer.

34. (New) The method of Claim 22, wherein the at least one trace element is a metal.

35. (New) The method of Claim 34, wherein the at least one trace element is calcium.

36. (New) The method of Claim 34, wherein the at least one trace element is aluminum.

37. (New) The method of Claim 34, wherein the at least one trace element is iron.

38. (New) The method of Claim 34, wherein the at least one trace element is copper.

39. (New) The apparatus of Claim 1, wherein the cancer is detected by analyzing a content of a trace element in the sample.

40. (New) The apparatus of Claim 39, wherein the trace element is a metal.

41. (New) The apparatus of Claim 39, wherein the trace element is calcium.

42. (New) The apparatus of Claim 39, wherein the trace element is aluminum.

43. (New) The apparatus of Claim 39, wherein the trace element is iron.

44. (New) The apparatus of Claim 39, wherein the trace element is copper.

45. (New) The apparatus of Claim 1, wherein the detector is a spectrograph.

46. (New) The apparatus of Claim 1, wherein the cancer is selected from the group consisting of bladder, colon, endometrial, lung, ovarian, prostate and rectal cancer.